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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,528	06/25/2001	Michael A. Ekhaus	2222.0730001	5737
26111 7590 08/11/2008 STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C. 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				
EXAMINER STERRETT, JONATHAN G				
ART UNIT		PAPER NUMBER		
3623				
MAIL DATE		DELIVERY MODE		
08/11/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/887,528

Applicant(s)

EKHAUS ET AL.

Examiner

JONATHAN G. STERRETT

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 27 and 35-41 is/are pending in the application.
- 4a) Of the above claim(s) 9, 10, 19, 27 and 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-18, 36-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This **Non-Final Office Action** is responsive to 28 May 2008. **Currently Claims 1-8, 11-18, 36-41** are rejected below. **Claims 9, 10, 19, 27 and 35** are withdrawn. **Claims 20-26 and 28-34** are cancelled.

Response to Arguments

2. Applicant's arguments have been fully considered, but are moot in view of new grounds of rejection below. As noted below, the claims in the invention are not statutory under 35 USC 101.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-8, 11-18 and 36-41 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1, 11, 36 and 41 are rejected under 35 U.S.C. 101 based on Supreme Court precedent, and recent Federal Circuit decisions, the Office's guidance to examiners is that a § 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. *Diamond v. Diehr*, 450 U.S. 175, 184 (1981);

Parker v. Flook, 437 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780,787-88 (1876).

An example of a method claim that would not qualify as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

Here, applicant's method steps, fail the first prong of the new Federal Circuit decision since they are not tied to another statutory class and can be performed without the use of a particular apparatus. Thus, **Claims 1, 11, 36 and 41** are non-statutory since they may be performed within the human mind.

Claims 2-8, 12-18, 37-40 are dependent claims and are non-statutory for the reasons given above for independent **Claims 1, 11, 36 and 41**.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to

a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1-7, 11-17 and 36-41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheena et al. (U.S. 6,049,777).

As per claim 1, Sheena et al. discloses a method of preparing a recommendation to be accessed by a user comprising the steps of:

generating a sparse unary ratings matrix from the user's selected preferences, wherein said user's selected preferences are represented as binary data in said sparse unary ratings matrix (col. 5, lines 2-17; col. 11, lines 58-67; Figure 2; The system discloses using a sparse unary ratings matrix based on determining whether or not a user has rated an item, where a rating would be indicated by a positive value and no rating would be indicated by no value. This illustration reads on Applicant's definition of what is meant by "unary data" on page 12 of their Specification, where it states that "unary data indicates a ratings data in which there are only two types of information: positive and no information." Additionally, in col. 8, lines 41-46, Sheena et al. discloses using 1 to indicate that the user has rated the item and 0 to indicate that the user has not rated the item.);

forming a plurality of data structures representing said sparse ratings matrix (col. 3, lines 40-57; col. 4, lines 56-67; The sparse ratings matrix is comprised of sparse vectors that represent item profiles and user profiles, where the item profiles include ratings on the items and the user profiles include users' ratings of the items.);

forming a runtime recommendation model from said plurality of data structures (col. 8, line 41-col. 9, line 56; Several similarity models are used to determine recommendations for users.);

determining a recommendation from said runtime recommendation model in response to a request for a recommendation (col. 6, lines 32-33 and 48-62; col. 7, lines 1-8 and 35-38; col. 8, line 28-col. 9, line 56; col. 10, lines 21-23; col. 13, lines 6-9; col. 26, line 66-col. 27, line 1; col. 27, lines 18-22; Several similarity models are used to determine recommendations for users. Requested data objects retrieve profiles that match the criteria from a user's request for a recommendation.); and

providing said recommendation in response to said request (col. 6, lines 32-33 and 48-62; col. 7, lines 1-8 and 35-38; col. 10, lines 21-23; col. 11, lines 45-55; col. 13, lines 6-9; col. 26, line 66-col. 27, line 1; col. 27, lines 18-22; item 110 in Figures 1 and 3; Recommendations are provided to users. Requested data objects retrieve profiles that match the criteria from a user's request for a recommendation.).

Sheena does not teach where each binary data entry has a value of either zero or one. However, the recited method steps would be performed the same regardless of the specific data. Further, the structural elements remain the same regardless of the specific data. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, *see In re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); *In re Lowry*, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); *MPEP* ' 2106.

Official Notice is taken that entering a 0 or 1 for selecting a choice is old and well known in the art and in combination with the teachings of Sheena would have been obvious to one of ordinary skill in the art at the time of the invention by producing a predictable result in combination with the teachings of Sheena regarding providing ratings (see column 4 line 24-25).

As per claim 2, Sheena et al. discloses the method of claim 1, further comprising calculating a unary multiplicity voting recommendation from said runtime recommendation model (col. 8, lines 41-46; col. 11, lines 30-32; col. 16, lines 22-33; Zeros and ones (i.e., unary numbers) are used in the recommendation models.).

As per claim 3, Sheena et al. discloses the method of claim 1, further comprising calculating a non-unary multiplicity voting recommendation from said runtime recommendation model (col. 10, lines 5-15; col. 17, lines 4-6; Numbers between zero and one or greater than one (i.e., binary numbers) are used in the recommendation models.).

As per claim 4, Sheena et al. discloses the method of claim 2, wherein said calculating a unary multiplicity voting recommendation comprises calculating an anonymous recommendation (col. 3, lines 22-23; A user profile may represent more than one user, thus maintaining the anonymity of the individual users.).

As per claim 5, Sheena et al. discloses the method of claim 2, wherein calculating a unary multiplicity voting recommendation comprises calculating a personalized recommendation (col. 3, lines 36-38; col. 24, lines 58-60).

As per claim 6, Sheena et al. discloses the method of claim 3, wherein calculating a non-unary multiplicity voting recommendation comprises calculating an anonymous recommendation (col. 3, lines 22-23; A user profile may represent more than one user, thus maintaining the anonymity of the individual users.).

As per claim 7, Sheena et al. discloses the method of claim 3, wherein calculating a non-unary multiplicity voting recommendation comprises calculating a personalized recommendation (col. 3, lines 36-38; col. 24, lines 58-60).

As per claim 11, Sheena et al. discloses a method of preparing a user recommendation comprising:

generating a sparse unary ratings matrix, wherein said sparse unary ratings matrix includes ratings data represented as binary data (col. 5, lines 2-17; col. 11, lines 58-67; Figure 2; The system discloses using a sparse unary ratings matrix based on determining whether or not a user has rated an item, where a rating would be indicated by a positive value and no rating would be indicated by no value. This illustration reads on Applicant's definition of what is meant by "unary data" on page 12 of their Specification, where it states that "unary data indicates a ratings data in which there are only two types of information: positive and no information." Additionally, in col. 8, lines 41-46, Sheena et al. discloses using 1 to indicate that the user has rated the item and 0 to indicate that the user has not rated the item.);

providing an update ratings data structure (col. 3, lines 30-33; col. 7, lines 54-65);

forming a plurality of data structures representing said sparse unary ratings matrix (col. 3, lines 40-57; col. 4, lines 56-67; The sparse ratings matrix is comprised of

sparse vectors that represent item profiles and user profiles, where the item profiles include ratings on the items and the user profiles include users' ratings of the items. Additionally, in col. 8, lines 41-46, Sheena et al. discloses using 1 to indicate that the user has rated the item and 0 to indicate that the user has not rated the item.);

forming a runtime recommendation model from said plurality of data structures and said update ratings data structure (col. 8, line 41-col. 9, line 56; Several similarity models are used to determine recommendations for users.);

determining a recommendation from said runtime recommendation model in response to a request for a recommendation (col. 6, lines 32-33 and 48-62; col. 7, lines 1-8 and 35-38; col. 8, line 28-col. 9, line 56; col. 10, lines 21-23; col. 13, lines 6-9; col. 26, line 66-col. 27, line 1; col. 27, lines 18-22; Several similarity models are used to determine recommendations for users. Requested data objects retrieve profiles that match the criteria from a user's request for a recommendation.); and

providing said recommendation in response to said request (col. 6, lines 32-33 and 48-62; col. 7, lines 1-8 and 35-38; col. 10, lines 21-23; col. 11, lines 45-55; col. 13, lines 6-9; col. 26, line 66-col. 27, line 1; col. 27, lines 18-22; item 110 in Figures 1 and 3; Recommendations are provided to users. Requested data objects retrieve profiles that match the criteria from a user's request for a recommendation.).

Claims 12-17 and 36-41 recite subject matter similar to the limitations already rejected above in claims 1-7 and 11. Therefore, claims 12-17 and 36-41 are rejected on the same basis as claims 1-7 and 11 above.

Additionally, with regard to independent claims 36 and 41, Sheena et al. discloses applying the sparse vectors/arrays (i.e., the user profiles and the item profiles) to several numbers of recommendation models that use zero and non-zero entries, thereby using a first recommendation model and a second recommendation model (col. 3, lines 34-57; col. 19, lines 50-50; col. 20).

6. Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheena et al. (U.S. 6,049,777) and Schwinger, Julian, "The Geometry of Quantum States," Feb. 15, 1960.

As per claim 8, Sheena et al. discloses wherein forming a runtime recommendation model from said plurality of data structures comprises: mapping each rated item in the sparse unary ratings matrix to a category (col. 15, lines 3-11 and 18-23).

Sheena et al. does not expressly disclose wherein said mapping step comprises multiplying said unary ratings matrices by a mappings matrix between said unary ratings matrices and a plurality of categories.

Schwinger discloses multiplying matrices by a mappings matrix in order to map the matrices to that matrix (middle of page 260, "The product of an operator with a vector expresses a mapping upon another vector in the same space..."). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Sheena et al. to use matrix multiplication as disclosed in Schwinger to map the

rated items in the sparse unary ratings matrix to a category because doing so is a standard way in the art to map matrix data and also, because using a mathematical formula to map the matrix provides an efficient and effective means for mapping data, thereby enhancing Sheena et al.'s current means of mapping data.

Claim 18 recites subject matter similar to the limitations already rejected above in claim 8. Therefore, claim 18 is rejected on the same basis as claim 8 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached Monday – Friday from 8:30am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell, can be reached at 571-272-6737.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/JGS/

6 August 2008

/Jonathan G. Sterrett/

Primary Examiner, Art Unit 3623